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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GEREZGIHER, YEMANE M

ART UNIT PAPER NUMBER

2144

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/633,326

Applicant(s)

NACE ET AL. *h*

Examiner

Yemane M Gerezgiher

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Pri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Pri rity under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The response mailed/faxed on 01/05/2004 has been entered. Claims 1 - 21 have been reconsidered.

Response to Arguments

2. Applicant's arguments filed 01/05/2004 have been fully considered but they are not persuasive.

The applicant refers to the specification Page 2, Line 2 through Page 3, Line 2, to indicate the novelty of the claimed invention disclosed. However, The Examiner reminds the applicant(s) that the interpretation of the claimed invention was not in light of the specification, but in light of the claims as presented in this application. As per **claims 1, 17 and 18**, Applicant argues that Banga (" Measuring the capacity of a web server") did not teach or suggest a ***client generating plurality of requests to the server, the client providing a desired rate of requests by calculating an actual rate of requests being generated and adjusting the actual rate to within a predetermined range of the desired rate such that a continual rate of requests are provided to the server in order to facilitate determining server capacity*** (Applicant's REMARKS, Page 5-6).

However, Banga clearly disclosed a *client generating plurality of requests to the server* in order to stress test a web server to determine the performance/capacity of the web server. See Page 5, Section 4 entitled: *A Scalable Method for Generating HTTP requests* and Page 5 Section 4.2, "... generating HTTP requests at a certain rate and with a certain request distribution ..."

As far as the client providing a desired rate of requests by calculating an actual rate of requests being generated and adjusting the actual rate to within a predetermined range of the desired rate such that a continual rate of requests are provided to the server is concerned, Banga disclosed a client generating a desired rate of requests and measuring the request rates generated and determining the capacity of the server. See Page 9, Section 5.4 and Page 8, Left Column ("... 130 requests per second, which is the capacity of our server for this request size ... the request rate remains nearly constant at the capacity of the server").

Clearly, the specific capacity (130 requests per second) of a server described above was not randomly simulated, but calculated based on the desired client rate of requests and actual generated requests. Thus, determining the capacity of the web server by *calculating an actual rate of requests being generated and adjusting the actual rate to within a predetermined range of the desired rate such that a continual rate of requests are provided to the server* was inherently disclosed by the teachings of Banga.

Thus, the rejection made is proper.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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2. Claims 1, 4 – 12, 17 and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Banga et al ("Measuring the capacity of a web server") hereinafter referred to as Banga.

As per claims 1, 17 and 18, Banga disclosed techniques of measuring capacity of a web server by generating plurality of HTTP client requests ("generating bursty traffic with peak loads that exceed the capacity of the server") to the server providing a **scalable means of generating HTTP requests** where the generated request is independent of the rate at which the server handles requests. Banga disclosed a **client generating plurality of requests to the server** (See Page 5, Section 4 entitled: A Scalable Method for Generating HTTP requests and Page 5 Section 4.2) where the **client providing a desired rate of requests by calculating an actual rate of requests being generated and adjusting the actual rate to within a predetermined range of the desired rate such that a continual rate of requests are provided to the server in order to facilitate determining server capacity** was inherently disclosed for the same reason described above (Response To Arguments). Banga disclosed increasing the rate of HTTP request until the HTTP server reached at its maximum capacity where the server is stooping to call the accept function in order to keep up with the high HTTP request rate, because the actual requested rate is exceeding the predetermined threshold and adjusting the desired request rate by using a constant think time chosen to achieve a consistent request rate where adding client requests to the queue of the server's listen socket increases and the request rate

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remains nearly constant at the capacity of the server (Figures. 1 – 3, 7 and 8 and Page 1, Sections 1 through Page 9, Section 5.4)

As per claims 4 - 6, Banga disclosed a capacity planning (performance measurement) by monitoring the performance of the server based on the generated HTTP requests and adjusting the desired request according to the predetermined threshold (sections 4 – 5.4)

As per claim 7 – 12, Banga disclosed that measuring the capacity of a server comprising a database storing HTTP requests, a queuing mechanism and a queue storing the requests according to certain time sequence for execution (sections 2 – 4.4)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banga et al (article, “ Measuring the capacity of a web server”) as applied to claims above, and further in view of Yu (U.S. Patent Number 6,078,943).

As per claims 13 – 16, Banga disclosed stress testing of a web server by generating multiple HTTP requests and monitoring and comparing the rate of the generated requested against the predetermined threshold rate and adjusting the

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request rate according to the predetermined rate and generating consistent request to the server attaining the capacity of the web server.

However, Banga did not teach a scheduler or a feedback loop controlling the desired rate of requests.

Lu disclosed a scheduler ("arbitrator") receiving an address-mapping request and a feedback loop provided to the scheduler (col.2, lines 55-61 and col.8, lines 41-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the teachings of Yu related to scheduler and feedback loop provided to the scheduler and have modified Banga related to the measuring capacity of a web server, because the scheduler could benefit to route requests to a chosen server where the feedback loop provided to the scheduler could be used to generate an alarm notification of server overloads, so that fewer client requests are mapped to the overloaded server.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banga et al (article, " Measuring the capacity of a web server") in view of Dantressangle (U.S. Patent Number 6,446,120)

As per clams 2 and 3, Banga disclosed stress testing of a web server by generating multiple HTTP requests and monitoring and comparing the rate of the generated requested against the predetermined threshold rate and adjusting the request rate according to the predetermined rate and generating consistent request to the server attaining the capacity of the web server.

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However, Banga did not teach a control input for adjusting or providing the desired rate of requests.

Dantressangle disclosed a virtual browser (HTML input form) for launching the configurable stresser where the user at the client server fills the information needed to perform testing such as the desired rate of requests (Abstract, Figs. 8 – 10 and col.10, lines 36-63). One of ordinary skill in the art would have been motivated find teachings that may have allowed for a user at a client station to enter specified data in order to perform testing the performance of a server.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the teachings of Dantressangle related to stressing a web server with the browser “control input” and have modified Banga related to measuring capacity of a web server, because such modification would benefit transmitting commands from the client computer to the server.

6. Claims 19 -21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banga et al (article, “ Measuring the capacity of a web server”) in view of what would have been obvious to one having ordinary skill in the art at the time the invention was made.

Regarding to claims 19 –21, Banga disclosed stress testing of a web server by generating multiple HTTP requests and monitoring and comparing the rate of the generated requested against the predetermined threshold rate and adjusting the

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request rate according to the predetermined rate and generating consistent request to the server attaining the capacity of the web server.

However, Banga did not show if actual requests per second are below the target per second by performing a subtraction, decreasing actual request if above the target or maintaining the request if the actual request generated is equal to the target request.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the target request rate by performing a subtraction to decrease actual requests generated above the target or maintain the actual rate if it is the same as the target rate and have modified Banga related to measuring capacity of a server, because such a modification helps determine the capacity of a server more efficiently.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


8. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

- a. Sarukkai, Sekhar R. (U.S. Patent Number 6,571,288) Entitled: *Apparatus and method that empirically measures capacity of multiple servers and forwards relative weights to load balancer*
- b. Ahuja, Sudhir Raman et al. (U.S. Patent Number 6,175,869) Entitled: *Client-side techniques for web server allocation*
- c. Ballard, Clinton L (U.S. Patent Number 6,078,960) Entitled: *Client-side load-balancing in client server network*

9. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Yemane Gerezgiher whose telephone number is 703-305-4874. The examiner can normally be reached on Monday- Friday from 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful. The examiner's supervisor, Harvey Jack B, can be reached at (703) 305-9705.

Yemane Gerezgiher
AU 2144


JACK B. HARVEY
SUPERVISORY PATENT EXAMINER